



NOBLE NEWS & VIEWS

SOIL HEALTH

Look for These Soil Health Indicators in the Field

by Jeff Goodwin, conservation stewardship leader and range and pasture consultant | djgoodwin@noble.org



Soil health is often defined as “the continued capacity of the soil to function as a vital, living ecosystem that sustains plants, animals and humans.”

We often think of soil health management as a new strategy, but it's actually not. Healthy soils, with effective nutrient and hydrologic cycles, were functioning well before man decided to manage them. Agriculture in the early 1900s tended to focus more on plowing up the prairie soils with industrial technology and machinery rather than focusing on the soil's ecology, thus soils were largely viewed as a medium to grow crops.

For some, the Dust Bowl of the 1930s changed our perception of how we view soil. For instance in 1949, Aldo Leopold in *A Sand County Almanac* stated, “Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants and animals.” Leopold went on to state, “When we see land as a community to which we belong, we may begin to use it with love and respect.”

Fast forward to 2018 and much has changed in how we view the soil. What has not changed is our responsibility as land stewards, and that process starts with how we see the soil.



The Dust Bowl of the 1930s changed our perception of how we view soil.



When we see land as a community to which we belong, we may begin to use it with love and respect.”

Aldo Leopold

SOIL HEALTH INDICATORS

You can use the following five indicators of soil health on any farm with just a shovel, your eyes and your nose. The next time you're out for a trip across the pasture, take some time to look beyond what's growing on the surface. Look down, dig a hole and see what your soil is telling you.



ONE
SOIL
COLOR

Soil color provides a tremendous amount of information. Soil color can tell us the amount and state of organic matter and iron oxide, age, and other physical processes. In general, the darker the soil, the higher the organic matter content. Soil is typically darkest in the uppermost layers of the soil profile, and it lightens as depth increases. Soil organic matter and soil organic carbon are primary drivers in biologically active soil systems. In some cases, the dark color can be due to the presence of reduced iron and manganese in our deep prairie soils.

Today, we use soil color to not only gain a general sense of organic matter but to classify soils across the globe with a standard soil color system. Albert H. Munsell first standardized the soil color system as we know it today based on a system with three components: hue, value and chroma. It was primarily standardized for use in industry as a way for companies to order standard, consistent colors for materials. The U.S. Department of Agriculture later adopted the Munsell system as its official classification of soil colors. Following much success in its use by soil scientists, the USDA later helped develop the industry-standard Munsell Soil Color Book.



TWO
SOIL
STRUCTURE

Soil structure is the arrangement of soil particles in different sizes and shapes. Structure often determines the amount of pore space between particles. Pore space is the space between soil aggregates, which the USDA Natural Resources Conservation Service define as “groups of soil particles that bind to each other more strongly than to adjacent particles.” More pore space allows for greater water infiltration.

The ability of a soil to hold its particles together and form soil structure is referred to as “aggregate stability.” Soil aggregation can occur by physical processes, such as when positively charged cations bind with clay particles. Soil aggregation can also occur biologically by organic adhesives. These organic adhesives are created by soil microbes decomposing organic matter or by sugars excreted from plant roots. The amount of organic matter in a soil is a primary driver of aggregate stability. Commonly, aggregate stability increases as the percentage of soil organic matter increases.

Soil texture, or the amount of sand, silt or clay content, also plays a large role. Generally, soils with higher clay content inherently have greater amounts of organic matter. Thus, soil aggregation and structure are much more easily achieved. It is more difficult for sandy soils to build soil structure largely due to lower organic matter concentrations.

SOIL HEALTH MEASURES

In order to better see the soil, we need to know what we are looking for. Recently, the Soil Health Institute released its Tier 1 soil health measures, all of which are considered effective indicators of soil health:

- Organic carbon
- pH
- Water-stable aggregation
- Crop yield
- Texture
- Penetration resistance
- Cation exchange capacity
- Electrical conductivity
- Nitrogen
- Phosphorus
- Potassium
- Carbon mineralization
- Nitrogen mineralization
- Erosion rating
- Base saturation
- Bulk density
- Available water holding capacity
- Infiltration rate
- Micronutrients

All 19 of these indicators provide valuable insight into the health of the soil system. While many of these measures require laboratory analysis, there are ways to get an idea of your soil's health just by looking at it.



Healthy soils are biologically active soils. The presence of biological activity can give you insight into the soil's state of health. Essentially, we are referring to the presence of earthworms, earthworm castings, dung beetles, etc., or evidence of their activity.

Earthworms are not only major decomposers of organic material, they are underground engineers. Earthworms create burrows through the soil profile, which increases porosity, enables water to move down and creates channels for roots. Earthworm excrement, known as castings, help increase nutrient cycling because pound-for-pound they contain significant amounts of nitrogen, phosphorus and potassium.

Dung beetles are another indicator of biological activity. Dung beetles are found on every continent except Antarctica, and they provide tremendous ecological services. These beetles take dung from the soil surface, roll it into a ball, lay their eggs in it and bury it deep in the soil. This creates a food source for their young and brings nutrient-rich organic material into the soil profile, which increases nutrient cycling and availability.

When looking at a soil profile or even a shovel slice, we can often see evidence of layers of resistance. These resistance layers can be seen in the soil structure with the presence of platy structure or horizontal layers. A couple of common sources of this effect are the continuous compaction of a soil from the soil surface and previous tillage creating what is known as a plow pan. Both of these restrictive layers limit root penetration and water infiltration.

One common indicator of a resistance layer can be found in the plant roots themselves, specifically in taproot species. On these sites, taproot plants will show signs of "J" rooting, which means a plant root grows down to the resistance layer and turns 90 degrees because it cannot penetrate the resistance layer. In extreme cases, water infiltration is also halted at this layer, which limits the soil's water holding capacity and ultimately exacerbates the effects of drought.

The fifth indicator isn't visual, but it depends on another one of our senses: smell. The earthy smell of a biologically healthy and active soil is the presence of an organic compound called geosmin.

In 1965, American scientists isolated the primary odor of soil to a single compound, which they called geosmin from the Greek, geo (earth) and osme (odor).

Geosmin is an organic product produced by active soil bacteria. Essentially, if your soils are cycling organic matter, they will have that fragrant earthy smell. Soils can have other smells, but they are not associated with soil health. Soils absent of oxygen can have a rotten egg or sulfur smell. This is often a sign of poor drainage.





RESEARCH

White-Tailed Deer Facts, Findings and Numbers

by Stephen L. Webb, Ph.D., ag systems technology manager | slwebb@noble.org



Studying trends in data can tell us a lot about the success (or lack thereof) of a management program. Below is a look at the 2016-2017 deer harvest numbers and trends for Oklahoma, Texas, the Southeast and the nation. You can evaluate where you are along the management continuum in terms of meeting your population management goals by comparing these harvest trends to your individual property or

deer management units/associations.

Much of the information reported was gathered by the Quality Deer Management Association for their annual report (2018), which reports on the status of white-tailed deer, arguably the species that provides the foundation of the hunting industry in North America. White-tailed deer are the most common big game species, most widely hunted and generate the greatest financial revenue to the hunting industry.

\$887B

amount that was spent on outdoor recreation in 2016.

\$87B

amount that is generated nationally from hunting deer species.

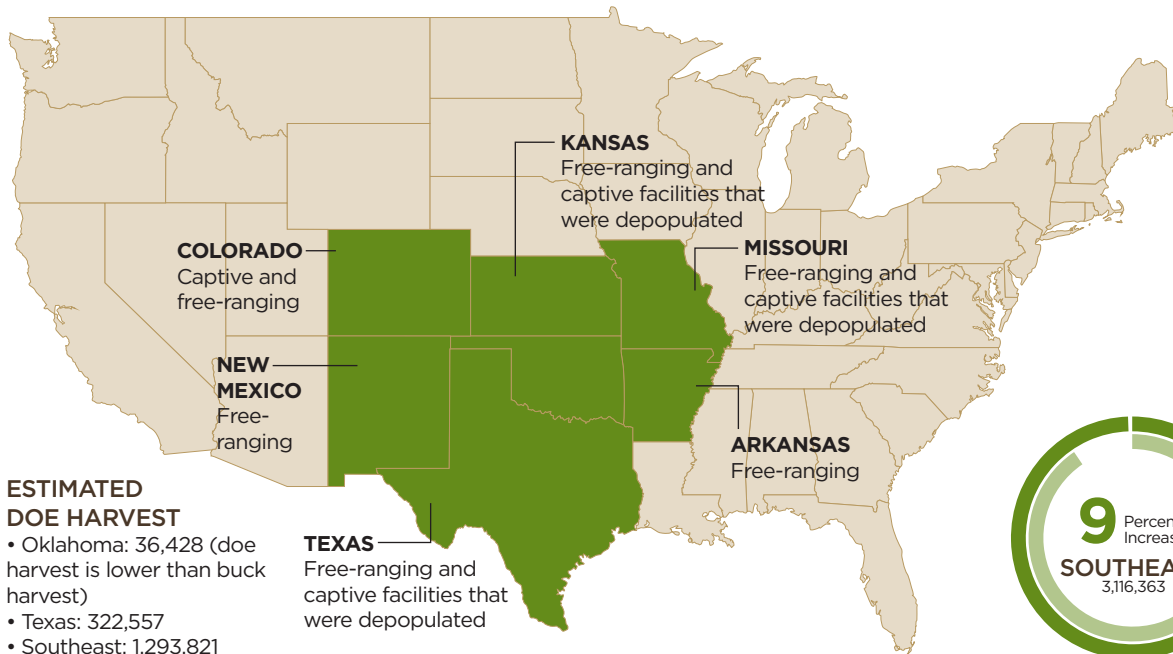
\$43.5B

amount that is generated nationally from hunting white-tailed deer.



CHRONIC WASTING DISEASE

Oklahoma is surrounded by states that have found chronic wasting disease (CWD) in captive and/or free-ranging populations. Oklahoma reported one captive deer facility with CWD that has been depopulated.



ESTIMATED DOE HARVEST

- Oklahoma: 36,428 (doe harvest is lower than buck harvest)
- Texas: 322,557
- Southeast: 1,293,821
- National: 2,830,264

COYOTE DEPREDATION

The nationwide average for coyote depredation of white-tailed deer fawns is 27 percent.

DEER HUNTING TRENDS Estimated buck harvest (≥1.5 years)

TEXAS

2018

2015/2016

Southeast (includes 11 states): 1,293,030 **National (includes 37 states): 2,818,571**

399,487

290,590

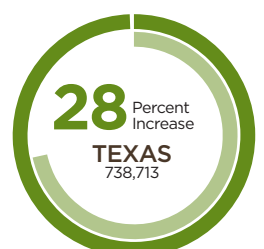
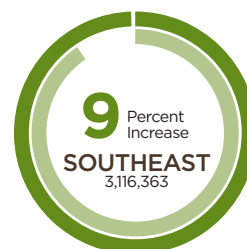
OKLAHOMA

2018

2015

62,595

51,495



AN INTERNATIONAL MEETING OF DEER EXPERTS

The International Deer Biology Congress (IDBC) meeting is held every four years. In 2018, it took place in Estes Park, Colorado. Attendance was above average with 215 attendees from 19 different countries.

The goals of the IDBC are to unite professionals interested in wild deer biology, management and farmed deer production, and to provide a forum to discuss common problems and share knowledge and experiences.

Some of the major topics covered during the Congress included general deer biology and ecology, evolution, genetics, management, conservation, veterinary aspects, antler biology, and antler and venison production.

What follows are findings from the latest research on white-tailed deer across their range.

INDIVIDUAL DEER BEHAVIORS INFLUENCE SURVIVAL

Deer are individuals just like humans, so we expect deer to behave differently in their selection for resources (food, water and shelter) and how they move, which can influence whether or not they live or die. For wild animals, survival and reproduction are fundamental to population dynamics. However, few studies have linked individual behaviors with the likelihood of survival or reproduction. Although this study wasn't on white-tailed deer, researchers found that individual elk survival was influenced by what habitats they chose to use. Basic habitat features had little influence on elk survival, whereas human factors were the main drivers of survival. Elk had greater survival around human residential structures and much lower survival when using habitats associated with oil and gas development.

WHITE-TAILED DEER HARVEST ON PUBLIC VS. PRIVATE LAND

Oklahoma and Texas are composed primarily of private land, which can offer hunters (if provided access) a "refuge" from high hunter densities that are typical of public land hunting. However, a recent study by Jacob Haus, Ph.D., University of Delaware, found that harvest of fawns, does and adult bucks were similar between public and private land. The one difference that Haus found was that sub-adult bucks using public land had a much greater harvest rate (73 percent) compared to sub-adult bucks using private land (20 percent).

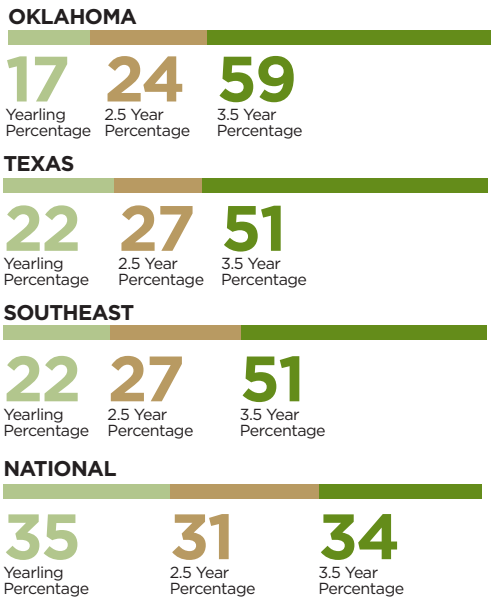
HUNTERS ARE IMPACTING WHITE-TAILED DEER BEHAVIOR

Hunters directly influence population dynamics of white-tailed deer, primarily through harvest, which is the most significant form of deer mortality. Besides direct impacts, hunters also influence deer behavior from their mere presence across the landscape. Bucks changed behavioral patterns such as movement and habitat use to avoid being detected or observed by hunters. Bucks moved less as the hunting season progressed and used habitats that provided greater security cover, along with avoiding areas most frequently used by hunters. For more information on these findings, please see the October 2017 article "Deer Stay One Hoof Ahead of Hunters," available at www.noble.org/deer-one-hoof-ahead.

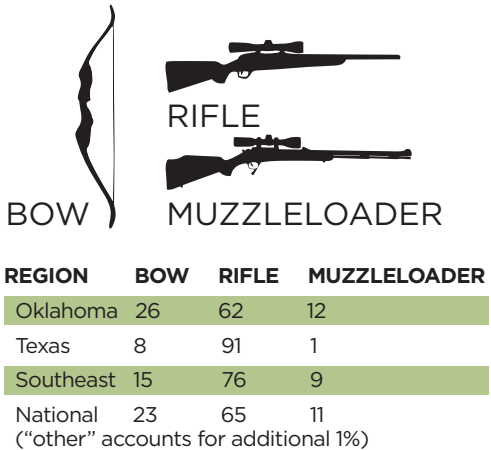


PERCENTAGE OF YEARLING, 2.5-, AND ≥3.5-YEAR-OLD BUCKS IN HARVEST

*Oklahoma and Texas were among the top five states with the greatest percentage of ≥3.5 year old bucks in the harvest



PERCENTAGE OF DEER HARVEST BY WEAPON TYPE



BUCKS ALTER HABITAT USE AND MOVEMENT TO FIND DOES DURING RUT

Continuing with the theme of individual deer behaviors, white-tailed deer bucks should adopt movement strategies that enable them to find mates during the rut. In a study conducted in Georgia, bucks and does used different habitats prior to the rut. However, once the rut rolled around, buck habitat use mirrored that of does. Bucks also altered their movement behavior to increase encounters with does. First, bucks used spatial memory of what habitats does used to begin their search. Next, bucks refined their search behavior using information of doe habitat use during the rut. Generally, bucks moved rapidly through areas where does were known to use. Then, once bucks encountered a doe or other cues (for example, smell or sight), the buck slowed down and searched more intensively until it found a mate.

RECOVERING AMERICA'S WILDLIFE ACT (H.R. 4647)

One of the greatest conservation threats in America is the decline of fish and wildlife populations and their natural habitats, which will influence people, industries and the economy. Without additional funding for these natural resources, many species and their habitat will be in danger.

The bipartisan Recovering America's Wildlife Act (H.R. 4647) would redirect \$1.3 billion from existing royalties derived from energy and mineral development on federal lands. This act does not require taxpayers to pay more. It simply redirects funds that are not currently earmarked to states for fish and wildlife conservation.

The allocation size to each state would be based on the state's human population size and land area. However, the act requires a 25 percent nonfederal match. As an example, Texas would receive approximately 5 percent (or \$63 million), and when combined with the nonfederal match, Texas would have approximately \$80 million for research, habitat management, land acquisition, education, law enforcement and similar conservation activities.

This is exciting news for conservationists and anyone who enjoys America's natural resources. This bill may be as important to wildlife conservation as the Federal Aid in Wildlife Restoration Act of 1937 (commonly referred to as Pittman-Robertson Act) and the Federal Aid in Sport Fish Recreation Act (commonly known as Dingell-Johnson Act) have been for providing financial assistance to states for conservation efforts. For fiscal year 2018, the Pittman-Robertson funds have been lagging behind what they were one year ago, while the Sport Fish funds are above where they were one year ago. For more details, visit bit.ly/3rd-quarter-excise-tax.

If the Recovering America's Wildlife Act is passed, it would amend the Pittman-Robertson Wildlife Restoration Act to "make supplemental funds available for management of fish and wildlife species of greatest conservation need as determined by state fish and wildlife agencies, and for other purposes." 🐾

ECONOMICS

Gauging The Current Outlook for Preconditioning Cattle

By Jason Bradley, agricultural economics consultant | jwbradley@noble.org



It's that time of year again — the time when decisions about weaning the spring-born calves have to be made. Is it better to sell them directly at weaning, or should they be held for a period of time in some type of preconditioning program?

Many reports show a cow-calf operation can gain value by preconditioning its calves before marketing. In this article, we will look at what the current preconditioning outlook shows us and a couple of other items to consider

when deciding whether preconditioning is for you.

Two things you must consider when thinking about preconditioning are the value of gain (VoG) and the cost of gain (CoG). The VoG is the value added to the animal with every pound it gains, while the CoG is what it costs you, the producer, to put that pound of weight on.

VALUE OF GAIN

To begin, we need to find the VoG. We can do this by estimating the selling value and the weaning value. But where do these values come from? This is where we use the futures market and a historical basis.

In the futures market, traders from all around the world come together with information and try to outguess each other. This provides us with the best guess at where the price for a group of 62 steers weighing 800 pounds and located somewhere near the region where cattle are fed is going to be at some time in the future — which is why we call it the futures market.

But not all of us have 62 steers weighing 800 pounds, so we have to adjust that futures price. This adjustment is the basis. We could get into the details of what basis is, but that's an article for another time. Basically, basis accounts for all the differences between your cattle and those in the futures contract. Since the cash market and the futures generally follow one another, a historical basis can be figured for almost every cattle type. Taking the basis for a particular set of cattle and adding it to the futures price, we can get an expected value.

Based on these assumptions above, our payweight on the weaning calf is going to be 570 pounds. Based on the current futures prices (as of this writing) for October of \$151.48 and a historical basis

IN THIS SCENARIO

By making some assumptions, we can come up with the prices for the cattle at weaning and after preconditioning.

The assumptions are that:

- We are weaning 600-pound calves.

- The weanling calves will experience 5 percent shrink due to the stress of the selling process.

- The preconditioned cattle will experience 1.5 percent shrink.

- The livestock auction OKC West is our sale barn.

- Our weaning date is going to be Oct. 2, 2019.

- The preconditioned cattle are going to gain 2.75 pounds per day.

SELLING AT WEANING WEIGHT

570 lbs
Weaning Payweight
X \$1.42 CWT

\$812.68

Final Sell Value

49 DAYS OF PRECONDITIONING

724 lbs
Weaning Payweight
X \$1.39 CWT

1,011.34
Final Sell Value
- \$76.25
Cost of Preconditioning

\$935.09

Total Net

63 DAYS OF PRECONDITIONING

761 lbs
Weaning Payweight
X \$1.38 CWT

1,055.92
Final Sell Value
- \$93.75
Cost of Preconditioning

\$962.17

Total Net

Final sell price is correct but may appear off due to hundred-weight rounding.



for steers and heifers of about \$1.10, our estimated sale price is around \$152.58 per hundredweight. Historically, we've seen a discount of around \$10 for a bawling calf at this weight. This makes our final weaning price \$142.58 and an estimated value of \$812.68 per head.

One of the most common preconditioning programs is to wean for 45 days with a vaccination protocol. Using our assumed average daily gain of 2.75 pounds per day for 49 days (so the sale date matches up), our estimated ending weight after preconditioning is 734.75 pounds. Subtracting the 1.5 percent shrink leaves us with a payweight of 723.7 pounds. Using the January futures of \$148.03 and a basis of -\$8.29, our estimated price is \$139.74 with a value of \$1,011.34 per head.

Now we can find our VoG. With \$198.66 of added value divided by the 134.75 pounds the animal put on, our VoG is \$1.47 per pound.

COST OF GAIN

The next step is to look at what the CoG

is going to be. We'll say a standard vaccine protocol is going to run us around \$15 per head. Then we'll add in the feed of \$1.25 per day. So, adding up 49 days of feed at \$1.25 per day plus \$15 for the vaccines, our preconditioning cost is \$76.25 per head. Dividing this by the estimated 134.75 pounds of gain gives us an estimated CoG of 57 cents per pound. In this scenario, our VoG is \$1.47 per pound and our CoG is 57 cents per pound, resulting in a margin of gain of 91 cents per pound.

Another 60-day preconditioning program is similar to the previous one except the calves have been weaned for at least 60 days. The health protocols are generally very similar to the 45-day program, so using many of the same assumptions, the selling price after 63 days of preconditioning is \$1,055.92 per head, giving us a VoG of \$1.40 per pound. At 54 cents per pound, the CoG is a little less since we can spread the vaccine cost out over more pounds. In the end, our margin of gain is 86 cents per pound.

So, economically, based on the first example, does this scenario make cents? Yes, about 91. I know, bad joke ... but does that mean you should precondition your calves?

Well, like all great answers, I'd start with saying it depends. That's because it really does.

There are other things to consider when preconditioning calves:

- It's going to take a lot more of your time.
- Weaning is a stressful period for cattle, and it requires you to be ready for any health issues that may arise.
- Not having the facilities to handle this process could prevent you from preconditioning.

If you think preconditioning is for you, make sure you evaluate the VoG and CoG using your operation's information. Any Noble consultant would be happy to answer any questions you might have about backgrounding your cattle. 🐄

FORAGE

Offsetting Winter Supplementation With Pasture



By James Rogers, Ph.D., pasture and range associate professor | jkrogers@noble.org



Feeding a beef cow herd through winter with stored feed and hay is time consuming and can make for a long winter feeding period and if you are overstocked it can make for

a long feeding period. It is a common management practice to test hay for its nutritive value so you can properly supplement it or, in a best-case scenario with a high-quality hay, not supplement at all. What you may not be doing is testing the nutritive value of your pastures. If you are properly stocked and have a good bermudagrass fertility program, those bermudagrass pastures may be able to carry you a lot farther into the winter than you may think.

Here at Noble, we have been looking at two methods in cow-calf production to extend the grazing season on bermudagrass-based pastures and reduce winter feeding of stored feeds. In our cow-calf study, all pastures receive 75 pounds of nitrogen (N) per acre (Spring N) in May as a base fertil-



BERMUDAGRASS NUTRITIVE VALUE

Table 1. Nutritive value of bermudagrass pastures with a spring-only nitrogen application, stockpiled or interseeded with wheat compared to wheat only pasture.

	November		December		January		February	
Treatment	%CP	%TDN	%CP	%TDN	%CP	%TDN	%CP	%TDN
Spring N	15.16	60.38	11.10	55.72	11.93	57.87	9.19	43.37
Stockpile	12.73	60.09	13.61	58.26	13.54	60.74	8.21	44.88
Interseed wheat	17.64	63.65	15.21	62.19	17.84	65.09		
Wheat	27.95	71.77	21.60	81.86	23.65	75.71		

FOUR BASIC MANAGEMENT PRACTICES

As part of the study, we follow a few basic management practices.



1 We soil test all of our pastures. Based on the test results, lime, phosphorus and potassium are applied to ensure the grass response to the applied nitrogen is not limited by deficiencies in other nutrients.



2 We control weeds. A good grass canopy is a big deterrent to weeds, but we apply chemical control when needed.



3 We rotate pastures and use cows to manage the frequency and intensity of grazing. This helps set up our pastures for treatments such as stockpiling or interseeding.



4 We have a proper stocking rate based on the forage amount our pastures are capable of producing and cow herd forage demand.

If these practices are followed, forage production is likely to increase over time. When we see increases in perennial pasture production, our mindset is often to purchase more animals to consume excess production. An alternative to increasing grazing animal numbers is to use this forage to graze deeper into the fall and winter to help offset winter feeding costs.

ity treatment.

The first treatment is a combination of stockpiled bermudagrass (Stockpile) where 50 pounds of N per acre is applied to bermudagrass in August or September, with grazing deferred until after frost. To further extend grazing beyond the stockpile, wheat is no-till interseeded into bermudagrass in the fall (Interseed wheat) and fertilized with 50 to 60 pounds of N per acre. Both stockpiled bermudagrass and interseeded wheat are allocated at 1 acre per cow. The second treatment is wheat planted no-till as a winter pasture monoculture (Wheat) and fertilized with 50 to 60 pounds of N per acre and allocated at 0.7 acres per cow.

STUDY RESULTS

To make grazing season extension work, you need to know the forage nutritive value. Since the study began in 2015, we have taken grab samples of these pastures from November through February and analyzed them for nutritive value so we can supplement the cow herd accurately and when needed.

Table 1 provides the nutritive value results of the bermudagrass pastures (Spring N, Stockpile) compared to wheat only (Wheat) or bermudagrass pastures interseeded with wheat (Interseed wheat). Note in Table 1 the quality of pasture that was available from November to February from our Spring N and Stockpile pastures and compare these values to the nutrient requirements for a 1,200-pound beef cow in Table 2. In our case, pasture quality was much better than the hay on hand that was tested and contained 7.0 percent crude protein (CP) and 57.0 percent total digestible nutrients (TDN). In our cow-calf study during winter 2017-18, we were able to feed some cows on a supplement of 30 percent range cubes and Spring N pasture with no hay.

EACH YEAR WILL BE DIFFERENT

Grazing season extension takes good management and a favorable environment. Each year is different, and some years will work better than others; as a manager, you must have enough flexibility to adjust accordingly. In the Spring N pastures, rainfall was favorable during 2017 so the excess forage was produced at the right time and could be used through fall and winter 2017-18.

There are years where the pasture quality is there but the quantity or volume is not, and you have to feed to make up for the difference. It is during these instances where having some stockpile is a good option. Stockpile can provide quality forage (Table 1) and volume to gain extra grazing days past frost. Another part

of this system is interseeding wheat into bermudagrass to contribute to the nutritive value and forage biomass, especially as you get in January and on into spring. By adding cereal wheat, we do increase the quality of forage available to the cows but incur additional costs with planting and seed. Interseeding wheat into bermudagrass has worked well in this system as we essentially double crop wheat with bermudagrass. We have been able to time graze cows on our Interseed wheat treatments beginning in January to meet protein needs, and then allow them to have full access to Interseed wheat in March as wheat continues to develop in the spring.

CONCEPT APPLIES TO OTHER PERENNIAL PASTURES

When properly managed, bermudagrass can have good nutritive value much later into the fall and winter than often is thought or realized. To know what you have, take and submit forage samples of the pastures you are considering using to extend your grazing season to the Noble Research Institute, your local extension office or other testing service. This concept does not limit itself to bermudagrass pastures. The same can be applied to other warm- and cool-season perennial pastures as well. Establish the nutritive value, determine how much you have available and utilize pastures to offset winter feeding demands, but keep an eye on cow response and body condition and be flexible and adjust as needed. 🐮

BEEF COW NUTRIENT NEEDS

Table 2. Diet nutrient density requirements for crude protein (CP) and total digestible nutrient (TDN) of a 1,200-pound beef cow at the middle third, last third of gestation or first 90 days postpartum producing 25 pounds of milk per day.

Cow weight	Gestation Period	%CP	%TDN
1,200 lbs.	Middle third	7.1	50
1,200 lbs.	Last third	7.9	54
1,200 lbs.	First 90 days after calving, 25 pounds per day milk	10.5	59

Source: Nutrient Requirements of Beef Cattle. Oklahoma State University publication E-974.

ECONOMY

Planning For Tax Filing Time on the Farm or Ranch



By Dan Childs, senior agricultural economics consultant | mdchilds@noble.org



In December 2017, the United States Congress passed what has become known as the Tax Cuts and Jobs Act (TCJA), which was then signed by the president, making it the law of the land. This law is the largest piece of tax

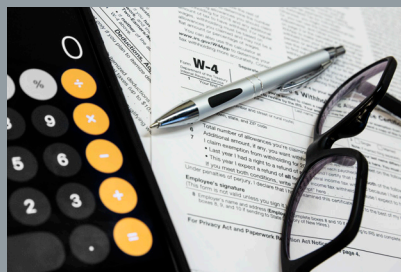
legislation enacted in more than 30 years. It will affect individuals and businesses in significant ways during its expected eight-year life. Some provisions are permanent, but many will expire Dec. 31, 2025.

It will be prudent for each taxpayer and business owner to become somewhat familiar with how this legislation will impact their individual and business income and expense reporting.

PROVISION CHANGES

A couple of the provisions in the new law that garnered much of the press were the change in the corporate tax rate and the 199A deduction.

The big news for corporations was that the TCJA removed the 15-to-35-percent tax rate range and replaced it with one flat tax of 21 percent. This will actually increase taxes for a number of smaller corporations that usually were taxed at the lower corporate rates. But it will substantially reduce the tax for larger



MANAGING TAXES SEMINAR

Congress passed a new tax law in December 2017 that will impact all business entities and people who will file a tax return for the 2018 tax year. Many of the details will be discussed at this seminar. Tax professionals will be available to answer questions.

**1-5 p.m.
Thursday, Nov. 29, 2018
Noble Research Institute
Kruse Auditorium, Entry 5
No Registration Fee**

corporations that were paying tax at the 35 percent rate.

In order to also provide some tax relief for businesses that are not corpora-

tions, Congress created the 199A deduction. After a couple of attempts, Congress finally settled on the language currently in the law. The deduction applies to all pass-through business entities, such as S corporations, limited liability companies taxed as partnerships, and partnerships plus sole proprietorships filing Schedule C's and F's. The deduction basically allows an exemption of 20 percent of a business's qualified business income. However, calculating the actual amount of the deduction is far from simple because of several limitations, exclusions and exemptions.

Another major change for agricultural producers is in the way a deduction can be taken for the expense of a depreciable asset placed in service after Sept. 27, 2017. Granted, this is a bit of an odd date, but that is the way the legislation is written. The total expense of all business assets placed in service after the September 2017 date and before Jan. 1, 2023, is deducted as bonus depreciation. The 100 percent level is gradually reduced after 2022 in 20 percent increments, winding up at zero after 2026.

As in the prior law, bonus depreciation applies unless the taxpayer elects out. A taxpayer can do so by asset class. Another change to bonus depreciation is that it also applies to fruit-bearing plants and nuts that are planted or grafted. In addition, previous bonus depreciation



rules applied to new property only, but the TCJA allows bonus depreciation of used property if it was acquired in an arm's length transaction and the taxpayer did not use the asset before the acquisition. For trade-ins, the bonus depreciation only applies to boot paid or the amount in excess of the adjusted basis of the replaced asset.

The Section 179 expensing deduction has been popular with business owners for many years. The challenge has been that it has fluctuated from \$10,000 to \$500,000 depending on the year. In December 2015, Congress set the deduction at \$500,000. The TCJA increased the limit to \$1 million for assets placed in service after Dec. 31, 2017. It will continue to be \$1 million until Congress acts to change it. Also increased — to \$2.5 million — was the phase-out threshold amount, meaning a taxpayer can spend up to \$2.5 million to purchase qualifying

property before additional purchases will begin to reduce the deduction dollar-for-dollar but not below zero. Keep in mind that a farmer cannot create a farming loss with a Section 179 deduction, but it can be used to offset W-2 wages.

One other note about depreciation: The TCJA repeals the requirement that farmers use the 150 percent declining balance method and allows use of the 200 percent declining method for assets that depreciated during a time period of 10 years or less. The TCJA also shortens the recovery period from seven years to five years for new machinery purchased and used in a farming business. Assets that you purchased used will continue to depreciate over seven years.

CAPITAL GAINS TAX RATES

There is a small change in the way the capital gains tax rates apply for tax years beginning after Dec. 31, 2017. Instead of the capi-

tal gains rate being correlated to the income tax rates as in pre-2018, the rate applies to adjusted net capital gain amounts.

Therefore, in 2018, the 0 percent capital gains rate applies to capital gains amounts up to \$77,200 for joint filers. The 15 percent capital gains tax rate applies to capital gains above the 0 percent amount and up to \$479,000. The 20 percent capital gains rate applies to capital gains amounts over \$479,000. All of these threshold amounts apply to joint filers.

The additional 3.8 percent tax rate on net investment income for adjusted net capital gains amounts over \$479,000 is still applicable in 2018.

There are many more provisions in the tax legislation passed in December 2017 than what has been discussed here. Many apply to individuals, and many more apply to businesses. Start having a conversation with your tax preparer. The dialogue could prove to be very beneficial. 🐾

EVENT RECAP

THE 'COW WHISPERER' SHOWS LOW-STRESS HANDLING TECHNIQUES

In September, nationally recognized, cattle-handling expert Curt Pate demonstrated ways to work cattle in an efficient, effective, low-stress manner to enhance cattle movement, consumer trust, meat quality, performance, and handler safety. The event was sponsored by the Noble Research Institute, the Oklahoma Beef Council, National Cattleman's Beef Association, Boehringer Ingelheim, Beef Quality Assurance and the Beef Checkoff.



NOBLE NEWS&VIEWS

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UPCOMING EVENTS

For more information or to register, visit www.noble.org/events or call 580-223-5810. Preregistration is requested. For other agricultural questions, please call our Ag Helpline at 580-224-6500.



OCTOBER | 18
Pecan Harvest Field Day

Join us to see the process of preparing the orchard floor for harvest and observe pecan harvesting in action on the Red River Farm. Equipment demonstrations will highlight the different types of equipment needed for a successful pecan harvest.

1:30-4 p.m.
Noble Research Institute
Red River Farm
No Registration Fee



OCTOBER | 1-3
Great Plains Fire Summit

Check Agenda at
Noble.org for Times
Ardmore Convention Center



OCTOBER | 4
Feral Hog Management Training

8:30 a.m.-noon
Pavilion
No Registration Fee



NOVEMBER | 29
Managing Taxes Seminar

1-5 p.m.
Kruse Auditorium
No Registration Fee



JANUARY | 15
How to Use Prescribed Fire for Wildlife and Livestock

8:30 a.m.-3 p.m.
Coffey Ranch
Registration Fee: \$25,
Includes Lunch